

Amendments to the Claims

The listing of claims will replace all prior versions, and listings of claims in the application.

1. (Currently amended) A frame structure of a vehicle comprising a flywheel housing, an intermediate housing and a transmission case that are connected to each other along a longitudinal axis of the vehicle to constitute a vehicle frame with an inner space, and to accommodate a running-power transmission path for transmitting power mechanism including a speed change unit for changing a speed of a rotational power from an engine to drive wheels via a forward/rearward movement switching unit; wherein and a PTO transmission mechanism including a PTO clutch for selectively performing power-transmission or power-shutoff of a rotational power from the engine via the forward/rearward movement switching unit,

~~said flywheel housing has a first end connected to the engine and a second open end opposite to said first end along the longitudinal axis of the vehicle; and~~ having a first abutting surface and a second abutting surface respectively located closer to a first end and a second end of said flywheel housing along the longitudinal axis of the vehicle, said first abutting surface including a first opening through which a flywheel can pass, said second abutting surface including a second opening through which said forward/rearward movement switching unit can pass,

~~said intermediate housing has a hollow shape with a first end and a second end located along the longitudinal axis of the vehicle, said first end having an abutting surface against which said second end of the flywheel housing abuts, a support surface located radially inwardly of said abutting surface so as to support said forward/rearward~~

~~movement switching unit, and an opening surrounded by said support surface, said opening serving as a first-end opening of said intermediate housing along the longitudinal axis of the vehicle; having a hollow body portion that extends along the longitudinal axis of the vehicle and a flange portion that is located at a first end of said hollow body portion, said flange portion having an abutting surface against which said second end of the flywheel housing abuts, a support surface that is located radially inwardly of said abutting surface so as to support said forward/rearward movement switching unit, and a first-end opening that is surrounded by said support surface and is closed by said forward/rearward movement switching unit, and~~

said forward/rearward movement switching unit including a reverser unit for switching the power transmission direction from a drive shaft extending along the vehicle longitudinal axis to a driven shaft located parallel to the drive shaft, and a reverser housing for accommodating said reverser unit and supporting said drive shaft and said driven shaft, said frame structure being characterized in that:

~~wherein said abutting surface and said support surface along the longitudinal axis of the vehicle are located so that at least a portion of the forward/rearward movement switching unit is accommodated within the flywheel housing~~

said speed change unit and said PTO clutch are accommodated in said transmission case;

at least a portion of said forward/rearward movement switching unit is positioned within said flywheel housing by connecting said second abutting surface of said flywheel housing to said abutting surface of said intermediate housing in a state with said

forward/rearward movement switching unit supported on said support surface of said intermediate housing;

said hollow body portion of said intermediate housing accommodates only transmission shafts including a propeller shaft that transmits the rotational power toward said speed change unit from said driven shaft, and a main shaft that transmits the rotational power toward said PTO clutch from said drive shaft, in a state that no transmission units such as a speed change mechanism and a clutch mechanism are disposed within said intermediate housing; and

said flange portion has an upper extension extending from a top wall of said hollow body portion towards an upper side of said hollow body portion, a lateral extension extending from a lateral wall of said hollow body portion towards a radially outer side and inner side of said hollow body portion and a lower extension extending from a bottom wall of said hollow body portion towards the upper side of said hollow body portion so as to define said abutting surface, said supporting surface and said first-end opening, thereby connecting said flywheel housing and said intermediate housing to each other in a state in which a center axis position of said hollow body portion is displaced vertically downward from a center axis position of said flywheel housing, so that said top wall of said hollow body portion is located vertically downward from the center axis position of said flywheel housing as close as possible to said transmission shafts.

2. (Currently amended) A frame structure of a vehicle ~~comprising a flywheel housing, an intermediate housing and a transmission case that are connected to each~~

~~other along a longitudinal axis of the vehicle to constitute a vehicle frame with an inner space for accommodating a running power transmission path for transmitting power from an engine to drive wheels via a forward/rearward movement switching unit: wherein~~

~~said flywheel housing has a first abutting surface and a second abutting surface respectively located closer to a first end and a second end of said flywheel housing along the longitudinal axis of the vehicle, said first abutting surface being connected to the engine, said second abutting surface being connected to said intermediate housing and having a first opening through which said forward/rearward movement switching unit can pass, said flywheel housing has a hollow shape with a center axis substantially coaxial with a crank shaft of said engine;~~

~~said intermediate housing has a hollow body portion and a flange portion, said hollow body portion having a first end and a second end and extending along the longitudinal axis of the vehicle with a center axis displaced downward from said crank shaft, and said flange portion being located closer to said first end of said hollow body portion, said flange portion having an opening in a radial center thereof, said opening of the flange portion serving as a first end opening of said intermediate housing along the longitudinal axis of the vehicle;~~

~~said flange portion has a radially outward portion radially outwardly extending from an upper part of said body portion and a radially inward portion radially inwardly extending from a lower part of said body portion, so that an abutting surface located opposite to said second abutting surface of said flywheel housing, a support surface located radially inward of said abutting surface so as to support said forward/rearward~~

~~movement switching unit, and said first end opening located radially inward of said support surface are defined according to claim 1, wherein said support surface is positioned closer to the second end in the longitudinal axis of the vehicle than said abutting surface.~~

3. (Currently amended) A frame structure of a vehicle according to claim ~~[[2]]~~ 1, wherein ~~said abutting surface and said support surface along the longitudinal axis of the vehicle are located so that at least a portion of the forward/rearward movement switching unit is accommodated within said flywheel housing~~ said support surface is positioned at the same as or closer to a first end in the longitudinal axis of the vehicle than the abutting surface of said intermediate housing.

4. (Currently amended) A frame structure of a vehicle according to claim 1, wherein:

~~said forward/rearward movement switching unit includes a reverser housing is supported on said support surface and a reverser unit accommodated in said reverser housing;~~

said reverser housing has a reverser housing body having an end wall that abuts said support surface so as to close the first opening of the intermediate housing and a peripheral wall extending from a peripheral edge of the end wall towards a first side of the vehicle along the longitudinal axis of the vehicle, and a lid for closing a first end of the reverser housing body along the longitudinal axis of the vehicle; and

said reverser housing ~~being~~ is arranged so as to seal an inner space of the flywheel housing against the inner space of the intermediate housing in a liquid tight manner.

5. (Currently amended) A frame structure of a vehicle according to claim 1, wherein said transmission case ~~accommodates a main speed change unit of the running-power transmission path, and said intermediate housing has a transmission shaft passing therethrough to connect said forward/rearward movement switching unit to said main speed change unit~~ has an inner space that is divided into a front chamber, an intermediate chamber and a rear chamber by a first intermediate wall and a second intermediate wall,
said front chamber accommodates the speed change unit,
said intermediate chamber accommodates a differential gear unit of the running-power transmission mechanism,
said rear chamber accommodates a PTO switch unit for performing power-transmission/power-shutoff from said PTO clutch to a rear PTO shaft and a mid PTO shaft, and
said PTO clutch is accommodated in a space above the differential gear unit within said intermediate chamber.

6. (Currently amended) A frame structure of a vehicle according to claim 5, further comprising a center plate interposed between said intermediate housing and said transmission case ~~so as to bearing support said transmission shaft~~ for supporting said propeller shaft and said main shaft.

7. (Withdrawn) A frame structure of a vehicle extending from a first side to a second side of the vehicle along a longitudinal axis of the vehicle so as to constitute a vehicle frame as providing an inner space, at least a portion of said inner space defining a hydraulic fluid reservoir space; wherein

said hydraulic fluid reservoir space having a partition wall that divides said hydraulic fluid reservoir space into a filter housing portion for accommodating a filter and a main portion other than said filter housing portion, and

said partition wall having a communication port for communication between said filter housing portion and said main portion in a lower region of said hydraulic fluid reservoir space.

8. (Withdrawn) A frame structure of a vehicle according to claim 7, wherein said partition wall is located so as to have the communication hole located substantially at the center of the hydraulic fluid reservoir space with respect to a vehicle width direction.

9. (Withdrawn) A frame structure of a vehicle according to claim 7, wherein said partition wall is located so as to have the communication hole located substantially at the center of the hydraulic fluid reservoir space with respect to the longitudinal axis of the vehicle.

10. (Withdrawn) A frame structure of a vehicle according to claim 7, said frame structure being arranged so that an oil heater can be installed in proximity of said communication hole.

11. (Withdrawn) A frame structure of a vehicle according to claim 7, comprising a flywheel housing, an intermediate housing and a transmission case that are connected to each other along the longitudinal axis of the vehicle, wherein a connection portion between said intermediate housing and said transmission case is arranged to enable fluid communication between the inner spaces of said intermediate housing and said transmission case, a connection portion between said intermediate housing and said flywheel housing is arranged to provide fluid tight seal between the inner spaces of said intermediate housing and said flywheel housing, so that said inner spaces of said flywheel housing, said intermediate housing and said transmission case are divided into a space of a dry chamber for accommodating a flywheel and said hydraulic fluid reservoir space.

12. (Withdrawn) A frame structure of a vehicle according to claim 11, wherein said connection portion between said flywheel housing and said intermediate housing, and said connection portion between said intermediate housing and said transmission case respectively have openings, through which a transmission shaft can pass, and said opening of said connection portion between said flywheel housing and said intermediate housing is closed with a transmission unit that is supported by an adjacent surface of said intermediate housing to said flywheel housing.

13. (Withdrawn) A frame structure of a vehicle according to claim 11, wherein said transmission case has a bulge that extends in the vehicle width direction as extending from an opening of the first end of the transmission case towards the second end of the transmission case along the longitudinal axis of the vehicle, said bulge

providing a space for said filter housing portion so that a filter can be installed in place by introducing the same from the first side of the longitudinal axis of the vehicle.

14-21. (Cancelled).

22. (New) A frame structure of a vehicle comprising a flywheel housing, an intermediate housing and a transmission case that are connected to each other along a longitudinal axis of the vehicle to constitute a vehicle frame with an inner space, and to accommodate a running-power transmission mechanism including a speed change unit for changing a speed of a rotational power from an engine via a forward/rearward movement switching unit,

said flywheel housing having a first abutting surface and a second abutting surface respectively located closer to a first end and a second end of said flywheel housing along the longitudinal axis of the vehicle, said first abutting surface including a first opening through which a flywheel can pass, said second abutting surface including a second opening through which said forward/rearward movement switching unit can pass,

said intermediate housing having a hollow body portion that extends along the longitudinal axis of the vehicle and a flange portion that is located at a first end of said hollow body portion, said flange portion having an abutting surface against which said second end of the flywheel housing abuts, a support surface that is located radially inwardly of said abutting surface so as to support said forward/rearward movement switching unit, and a first-end opening that is surrounded by said support surface and is closed by said forward/rearward movement switching unit, and

said forward/rearward movement switching unit including a reverser unit for switching the power transmission direction from a drive shaft extending along the vehicle longitudinal axis to a driven shaft, and a reverser housing for accommodating said reverser unit and supporting said drive shaft and said driven shaft, said frame structure being characterized in that:

said speed change unit is accommodated in said transmission case;

at least a portion of said forward/rearward movement switching unit is positioned within said flywheel housing by connecting said second abutting surface of said flywheel housing to said abutting surface of said intermediate housing in a state with said forward/rearward movement switching unit supported on said support surface of said intermediate housing;

said hollow body portion of said intermediate housing accommodates only a transmission shaft including a propeller shaft that transmits the rotational power toward said speed change unit from said driven shaft, in a state that no transmission units such as a speed change mechanism and a clutch mechanism are disposed within said intermediate housing; and

said flange portion has an upper extension extending from a top wall of said hollow body portion towards an upper side of said hollow body portion, a lateral extension extending from a lateral wall of said hollow body portion towards a radially outer side and inner side of said hollow body portion and a lower extension extending from a bottom wall of said hollow body portion towards the upper side of said hollow body portion so as to define said abutting surface, said supporting surface and said first-end opening, thereby connecting said flywheel housing and said intermediate housing to

each other in a state in which a center axis position of said hollow body portion is displaced vertically downward from a center axis position of said flywheel housing.

23. (New) A frame structure of a vehicle according to claim 22, wherein said support surface is positioned closer to the second end in the longitudinal axis of the vehicle than said abutting surface.

24. (New) A frame structure of a vehicle according to claim 22, wherein said support surface is positioned at the same as or closer to a first end in the longitudinal axis of the vehicle than the abutting surface of said intermediate housing.

25. (New) A frame structure of a vehicle according to claim 22, wherein:

said reverser housing is supported on said support surface;

said reverser housing has a reverser housing body having an end wall that abuts said support surface so as to close the first opening of the intermediate housing and a peripheral wall extending from a peripheral edge of the end wall towards a first side of the vehicle along the longitudinal axis of the vehicle, and a lid for closing a first end of the reverser housing body along the longitudinal axis of the vehicle; and

said reverser housing is arranged so as to seal an inner space of the flywheel housing against the inner space of the intermediate housing in a liquid tight manner.

26. (New) A frame structure of a vehicle according to claim 22, further comprising a center plate interposed between said intermediate housing and said transmission case for supporting said propeller shaft.